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REMARKS

Claims 1-34 are pending in the present Application. Claims 5, 15, 21-28 and 33 have been canceled and Claims 1, 11 and 29 have been amended leaving Claims 1-4, 6-14, 16-20, 29-32, and 34 for consideration upon entry of the present Amendment. Support for the amendment to Claims 1, 11, and 29 can be found in cancelled Claims 5, 15, 17 and 33. No new matter has been introduced by these amendments. Reconsideration and allowance of the claims are respectfully requested in view of the above amendments and the following remarks.

Election/Restriction

Claims 21-28 are cancelled, without prejudice, in response to the Examiner's indication of finality for the restriction requirement under 35 U.S.C. §121. Applicants retain the right to pursue these claims in a continuation or divisional application.

Claim Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 1-20 and 29-34 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Examiner has asserted that the claim language "surface area" is ambiguous. The Examiner believes that the language "surface area" has been used to indicate different things in Claim 1 and Claim 6. Applicants respectfully request clarification of the Examiner's position.

Claim 1 refers to a surface area to volume ratio of about $950 \text{ m}^2/\text{m}^3$ to about $4,000 \text{ m}^2/\text{m}^3$ and Claim 6 refers to a catalyst in the form of pellets having a surface area of about 100 square meters per gram to about 300 square meters per gram. Applicants see no ambiguity in the meaning of the term "surface area" as both Claim 1 and Claim 6 relate "surface area" to another parameter – in the case of Claim 1, surface area is related to volume and in Claim 6 surface area is related to weight. It is well known in the art that when surface area is related to weight that the described surface area is the area determined by BET analysis as described in paragraph 26.

With regard to the need to specify whether the catalyst is calcined or uncalcined,

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Applicants respectfully assert that the pending claims explicitly indicate where necessary to prevent confusion whether the catalyst is calcined or uncalcined (such as Claim 7). In other claims, a determination of whether the catalyst is calcined or uncalcined is within the skill of one of ordinary skill in the art in light of the specification.

Claim Rejections Under 35 U.S.C. § 102(b)

Claims 1-4, 5-14, 16-20, 29-32 and 34 stand rejected under 35 U.S.C. § 102(b), as allegedly anticipated by U.S.P.N. 4,227,023 ('023). Applicants respectfully traverse this rejection.

'023 discloses a mixed oxide catalyst of manganese, silicon, and one or more additives selected from the group consisting of magnesium oxide, calcium oxide, strontium oxide, and barium oxide. '023 does not teach or suggest that the mixed oxide catalyst has a bimodal distribution of pores as required by amended claims 1, 11 and 29. To anticipate a claim, a reference must disclose each and every element of the claim. *Lewmar Marine v. Barient Inc.*, 3 U.S.P.Q.2d 1766 (Fed. Cir. 1987). Because '023 does not teach each and every element of the pending claims Applicants respectfully assert that '023 does not anticipate the pending claims.

Claims 1-4, 5-9, 11-14 and 16-19 are rejected under 35 U.S.C. § 102(b) as allegedly anticipated by U.S.P.N. 3,968,172 ('172). The Examiner has asserted that the pellets of the examples would inherently be within the claimed range for surface to volume ratio. Applicants respectfully disagree.

The examples of '172 predominately uses pellets having a diameter of 6 millimeters and a thickness of 5 millimeters (see, for example, Col. 19, line 32). The pellets having a diameter of 6 millimeters and a thickness of 5 millimeters do not meet the instantly claimed limitations (Claim 1) for surface area to volume ratio. Pellets having a diameter of 6 millimeters and a thickness of 5 millimeters have a surface area to volume ratio of $667 \text{ m}^2/\text{m}^3$ which is clearly below the claimed range. Example 7 which uses a commercial magnesia in the form of tablets having a 3 millimeter diameter and a 3 millimeter thickness. The

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commercial magnesia tablet has a specific surface area of $20 \text{ m}^2/\text{g}$ and a pore size distribution pore radius of 50-140 Angstroms. (Col. 17, lines 19-22) The tablets of Example 7 do not anticipate Claim 1 because they do not have a bimodal pore distribution as instantly claimed.

Instantly pending Claim 11 is directed to an alkylation catalyst comprising a metal oxide wherein the catalyst has an aspect ratio of about 0.7 to about 1.0; and

further wherein the catalyst has a bimodal distribution of pores; and

further wherein the catalyst is in the form of pellets having a pellet density of about 1.3 to about 2.10 grams per cubic centimeter. '172 does not teach or suggest a catalyst tablet meeting all the limitations of this claim, particularly the pellet density requirement.

Instantly pending Claim 29 is not anticipated by the disclosure by '172 of tablets having a diameter of 6 millimeters and a thickness of 5 millimeters because the dimensions are outside of the claimed range. Furthermore, the tablets having a height 3 millimeters and a thickness of 3 millimeters fail to meet the requirement for a bimodal pore distribution. Accordingly, Applicants assert that '172 does not provide adequate basis for anticipation of the pending claims under 35 U.S.C. §102 (b).

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1-20 and 29-34 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over '023 in view of U.S. Patent Application No. 2003/0073572 ('572). Applicants respectfully traverse this rejection.

'572 was published on April 17, 2003. The instant application was filed on July 10, 2003, less than 1 year after the publication date of '572. Accordingly, '572 is, at best, a reference according to 102(e) and as such an obviousness rejection is only proper under 35 U.S.C §103(c). As '572 are commonly owned, Applicants believe the rejection is moot in view of the accompanying statement of common ownership.

Similarly, the rejection of Claims 1-20 and 29-34 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over '172 in view of '572 is moot in view of the accompanying statement of common ownership.

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It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance are requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 50-1131.

Respectfully submitted,

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